



**AFCTN Report
94-086**

**AFCTB-ID
94-112**



Technical Raster Transfer Using:

AlliedSignal Technical Services' Data



Supporting:

LDAA's AFATS Program

(Contract #F41608-91-C-1276)



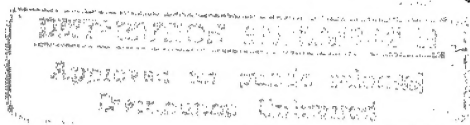
MIL-STD-1840A



MIL-D-28002A (Raster)

Quick Short Test Report

16 August 1994



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Prepared for
Electronic Systems Center
Air Force CALS Program Office
HQ ESC/AV-2
4027 Colonel Glenn Hwy Suite 300
Dayton OH 45431-1672

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16 August 1994

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Air Force CALS Test Bed

Notification of Test Results

16 August 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

AlliedSignal Technical Services

Identified as follows:

Title:	Technical Raster Transfer
Program:	AFATS
Program Office:	LDAA
Contract No.:	F41608-91-C-1276
QSTR No.:	AFCTB-ID 94-112

Received on the following media: **9-Track Tape**

The results of the QSTR evaluation are as follows:

MIL-STD-1840A Standard	Pass
MIL-STD-1840A Media Format:	Pass
MIL-D-28000A IGES:	N/A
MIL-M-28001B SGML:	N/A
MIL-R-28002A Raster:	Pass
MIL-D-28003 CGM:	N/A

Formal results with associated disclaimer are documented and available from the AFCTB.

**Air Force CALS Test Bed
HQ ESC/AV-2P
4027 Colonel Glenn Highway, Suite 300
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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze AlliedSignal Technical Services' interpretation and use of the CALS standards in transferring technical graphics data. AlliedSignal used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 94-112

Date of Evaluation: 16 August 1994

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator: Harry S. Barnes
AlliedSignal Technical Services Corp
One Bendix Road
Columbia MD 21045-1897
(410) 964-7240

Data Description: Technical Graphic Test
2 Document Declaration files
2 Raster files

Data Source System: 1840

HARDWARE VAX 4100 VMS/Deck TSZ07 Drive

SOFTWARE VMS Tapetool v1.2.10

Raster

HARDWARE IBM PC

SOFTWARE AutoCadd DXF to HiJaak GP4

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN Tapetool v1.2.10 UNIX
XSoft CAPS/CALS v40.4

MIL-R-28002 (Raster)

HP 735

AFCTN xrastb.hp
Carberry CADLeaf v4.0
InterCAP X-Change v7.82

SGI Indigo2

IGES Data Analysis (IDA) CALSView

SUN SparcStation 2

AFCTN xrastb.sun4
IDA IGESView v3.0

PC 486

Carberry CADLeaf Windows
IDA IGESView Windows
IDA CALSView Windows
Inset Systems HiJaak Pro
Expert Graphics RxHighlight v1.0

Standards

Tested:

MIL-STD-1840A
MIL-D-28002A

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in barrier sheet material as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Some 9-track tape units require this BPI to be set manually. A packing list showing all files recorded on the tape was indicated on the tape label.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool v1.2.10* utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's *CAPS read1840A* utility without any reported errors.

The physical structure of the tape meets the requirements defined in MIL-STD-1840A and ANSI x3.27.

3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration file or data file headers. This portion of the tape meets the requirements defined in MIL-STD-1840A for CALS header format.

4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included in this evaluation.

5. SGML Analysis

No Standard Generalized Markup Language (SGML) files were included in this evaluation.

6. Raster Analysis

The tape contained two Raster files. Both files were evaluated using the AFCTN *validg4* utility. This program reported that both files meet the CALS MIL-R-28002A specification.

The files were read into the AFCTN *xrastb.sun4* viewing utility. No problems were noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The Raster files were read into Carberry's *CADLeaf* software without a reported error. The images were displayed.

The files were read using IDA's *CALSVIEW* without a reported error.

The files were read and printed using IDA's *IGESView* and *IGESView for Windows* without a reported error.

The files were read into Inset Systems' *HiJaak for Windows* without a reported error.

The files were read using InterCAP's *X-Change* without a reported error.

The Raster files were imported into Expert Graphics' *Rx-Highlight* and displayed without a reported error.

The two Raster files submitted by AlliedSignal meet the CALS MIL-R-28002A specification.

7. CGM Analysis

No Computer Graphic Metafile (CGM) files were included on this tape.

8. Conclusions and Recommendations

The tape could be read properly using the AFCTN *Tapetool* and XSoft's *CAPS read1840A* utilities without any problems. No errors were reported in the Document Declaration files or data file headers. The physical structure of the tape meets the CALS MIL-STD-1840A requirements.

The Raster files meet the CALS MIL-D-28002A specification.

The tape submitted by AlliedSignal meets the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Aug 16 07:30:17 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set048

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001R001	Raster	F/00128	02048/000011	Extracted
D001R002	Raster	F/00128	02048/000008	Extracted

Catalog Process terminated normally.

9.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Aug 16 07:30:14 1994

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01

4

Label Identifier: VOL1
Volume Identifier: CALS01
Volume Accessibility:
Owner Identifier:
Label Standard Version: 4

HDR1D001 CALS0100010001000000 94223 00000 000000

Label Identifier: HDR1
File Identifier: D001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0000
Generation Version Number: 00
Creation Date: 94223
Expiration Date: 00000
File Accessibility:
Block Count: 000000
Implementation Identifier:

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

End of Volume CALS01

End Of Tape File Set

Tape Import Process terminated normally.

9.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Tue Aug 16 07:30:17 1994

MIL-STD-1840A File Set Evaluation Log
File Set: Set048

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: atscv1
srcdocid: CALS test
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19940811
dstsys: Unknown
dstdocid: ATSC CALS test
dstrelid: NONE
dtetrn: 19940811
dlvacc: NONE
filcnt: R2
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: Product Data
docttl: NONE

Found file: D001R001
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 001500,001159
rdensty: 0300
notes: NONE

Found file: D001R002
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: NONE
dstdocid: NONE
txtfilid: NONE
figid: NONE
srcgph: NONE
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 001500,001159
rdensty: 0300
notes: NONE

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

9.4 Other Tape Reading Logs

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001      ' ---  
/cals/caps/Bin/read1840A: writing data file 'aftb94112/ATSCCALStest/  
ATSCCALStest1.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb94112/ATSCCALStest/  
ATSCCALStest2.R.cci'.  
-- declaration file indicates 0 files of type T  
-- declaration file indicates 0 files of type G  
-- declaration file indicates 0 files of type H  
-- declaration file indicates 0 files of type Q  
-- declaration file indicates 2 files of type R  
-- declaration file indicates 0 files of type C  
-- declaration file indicates 0 files of type X  
-- declaration file indicates 0 files of type P  
-- declaration file indicates 0 files of type Z
```

10.1 File D001R001 - IGESView

14

4		3		2		1	
PART OR IDENTIFYING NUMBER	DESCRIPTION	REV. SH.	REV. STATUS OF SHEETS	REV. DATE	REV. DESCRIPTION	REV. DATE	REV. DESCRIPTION
8230207-0001	AS SHOWN				A RELEASED	10-2-81	BTW/MOT
					B REVISED PER EDR 181951	10-11-81	BTW

NOTES:

- WORKMANSHIP PER MIL-1-63431.
- MATERIAL: STEEL PER ASTM A36.
- SAG AND MARK IN ACCORDANCE WITH STEP 185, METHOD C.

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PARTS LIST						
UNLESS OTHERWISE SPECIFIED:				CONTRACT NUMBER		
3 PLACE DEC	.02	ANGLES	F41808-91-C-1278			
3 PLACE DEC	.02	ANGLES	F41808-91-C-1278			
MATERIAL: SEE NOTE 2				APPROVED: THOMPSON 93-02-16		
FINISH: NONE				APPROVED: THOMPSON 93-02-16		
NEXT JOB: USED ON				APPROVED: THOMPSON 93-02-16		
APPLICATION				APPROVED: THOMPSON 93-02-16		

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